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AN *Robt. Mayne*

ACCOUNT

OF

THE SEVERAL

LIFE-ASSURANCE COMPANIES

ESTABLISHED IN LONDON.

CONTAINING

A VIEW OF THEIR RESPECTIVE

MERITS AND ADVANTAGES.

BY FRANCIS BAILY,

OF THE STOCK-EXCHANGE.

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P R E F A C E.

THE utility and advantage of *Life-Assurance* are becoming every day more apparent. There are few persons in this country to whom the propriety of it is not manifest; or to whom the policy of the measure is not applicable. Much of the real and personal estate of this kingdom is held by those who have only a *life-interest* in the same; and whose incomes will consequently determine at their decease. All those who hold by *curtesy* or by *dower*, all *ecclesiastical* persons, and most of those who are possessed of *copyhold* estates, are of this description. But, besides this numerous class of individuals, there is an immense variety of others, in the different departments of society, subject to the same contingency. Every man engaged in either of the three *professions*, whose emoluments arise from his own personal abilities and exertions,—every one pursuing a *naval* or *military* life, whose income will cease at his death,—every person engaged in *manufactures*, *commerce*, or any other employment, whose

own immediate exertions are the support of the concern in which he is engaged,—these and many others, too numerous here to insist on, will often be desirous of sacrificing some part of their present emoluments and profits, not only with a view to secure a suitable provision for their families at their decease, but likewise to render their own lives more easy and comfortable, under the pleasing consolation that they have guarded against one of the great evils of a premature death.

Independent, however, of this general view of the subject, there are various other purposes for which Assurances are effected. Persons holding *Leases on lives*, and paying a *fine* on renewal, are oftentimes induced to insure a sum of money upon those lives, in order that they may be enabled to pay such fine when it becomes due. Some consider it a good method of securing a dubious or protracted *debt*, by assuring the life of the debtor. Others, again, may be entitled to an estate, or to a sum of money, at the end of a given term, or on the happening of a particular event, provided they be then alive to receive it: and, in order to secure such sum to their families, may be desirous of insuring their lives for such *term*, or against such *contingency*.

These, and a thousand other cases of daily occurrence, render this branch of the science interesting to every class of the community. Numerous Offices have lately sprung up, in the metropolis, for the purpose of granting Assurances on every possible contingency amongst lives in general; and it therefore becomes every one, engaged in the public business of life, to study this subject with attention.

But, notwithstanding the importance and utility of these inquiries, I fear that Life-Assurances are too often effected in a very loose and careless manner; and which can arise only from an ignorance of the true nature and constitution of the several Societies that have been formed for this purpose. A person is apt to imagine that, because the *Rates* are the same at all the Offices, it can be of little consequence at *which* of them he effects his policy.—If he is himself in doubt upon this subject, he applies to some of his acquaintance; who, influenced by partiality (or perhaps by a more disgraceful motive*) recommend him to that Office with which they are more immediately acquainted and connected; or who, equally ignorant with himself, confirm him in the indifference of his

* See the note in page 29.

choice. Thus, blindly driven to a hasty decision, he discovers (perhaps too late) the error into which he has either inadvertently fallen, or been insidiously betrayed. To remove the cause of this error, is the object of the present pamphlet: the origin of which I shall now proceed to explain.

In the year 1808 I published a treatise on the *Doctrine of Interest and Annuities*, wherein I entered into a full investigation of all the principles relative to that science; together with its application in the various questions arising from any commercial, political, or financial inquiries. In the preface to that volume I signified my intention of prosecuting the subject still further, so as to take in the whole *Doctrine of Life Annuities and Assurances*: a work which is at length finished, and which will shortly be published. The two volumes will together form a complete treatise on the science; and will, as far as I can observe, exhaust the subject. Much new matter has been introduced; and many problems have been inserted, which have never yet been considered by any preceding author. The fourteenth Chapter of the work, here alluded to, is *the same as the present pamphlet*; which, being of a popular nature, and on a subject whereon the public evidently required information, I have published in

this detached form: since many persons may be desirous of seeing what I have written upon this subject, without incurring the expense of purchasing the whole work. Uninterested in, and unconnected with any of the Societies herein mentioned, I have been anxious only to give a clear and unprejudiced account, deduced from their own plans and proposals, as submitted by them to the public.

The subject of Life Annuities and Assurances has employed the pens of some of our ablest mathematicians: but, till the late publications on the *Rate of human mortality* as observed amongst the inhabitants at *Northampton*, amongst mankind in general in *Sweden*, and amongst the Government Annuitants in *France* as given by *M. De Parcieux*, together with the numerous Tables of the values of *Life Annuities* deduced therefrom, the science had not been conducted with that degree of accuracy which the importance of the subject requires. In consequence of these improvements, however, the works of De Moivre, Dodson, and Simpson (where alone the reader could apply for a comprehensive view of the subject) have now become, in a great measure, obsolete and useless. The publication of the fourth edition of Dr. Price's *Observations on Reversionary Payments* (1783) formed a new era

in the science ; and showed the necessity of abandoning the *hypothesis* of De Moivre, and of deducing the value of Life Annuities and Assurances from *real observations*.

Hence arose the propriety and importance of a *general* revision of the subject ; and of a *general* correction of the rules, which have been given by preceding authors, for the solution of questions connected therewith. This, however, has never yet been attempted, till the publication of the work which I have above announced ; and which I flatter myself will be found to contain every thing that is really useful in the science. It is true that a partial attempt has been made, by Mr. Morgan, to correct some of those rules ; that is, such as arise in the case of *Contingent* Assurances : and his labours on this subject are contained in the several papers inserted by him in the *Philosophical Transactions* for 1788, 1789, 1791, 1794, and 1800.

Whoever will take the pains to read over those papers with attention, must be struck with surprise and regret at the *strange* and *confused* manner which Mr. Morgan has pursued, in order to obtain the solution of the several problems under consideration. No one, at the present advanced state of the science (with so

many models of simplicity and elegance before him) could expect to see any mathematical inquiries conducted in so loose, so obscure, and so extraordinary a manner. The investigations are tediously and unnecessarily prolix; crowded with useless repetitions, and a variety of unmeaning quantities. All which might, indeed, be excused if the resulting *formulæ* had been at once simple and correct: instead of which, we find the grossest errors committed, not only as to their *form*, but as to their *accuracy*. They are, for the most part, *unnecessarily* long; abounding with *useless* quantities, (which render their numerical solution exceedingly intricate and difficult); and oftentimes *at variance* with the particulars mentioned in the investigation: which, together with the *erroneous* manner in which they are printed, renders them of little or no use to the public. Most of his problems are investigated in *two* different ways, and are solved by the means of *two* distinct *formulæ*: but, notwithstanding the similarity of these methods is studiously kept from the observation of the reader, and although these double *formulæ* are, in each problem, totally different *in appearance*; yet they will be found in *all* cases to be precisely the same *disguised under different symbols*! A curious and interesting branch of the

science has been thus strangely distorted and enveloped in mystery ; a depraved taste in mathematical reasoning has been introduced ; and (what is, by far, of the greatest importance) many *false solutions* have probably resulted from too great a dependance on the general formulæ.*

Mr. Morgan and myself are the only persons that have ever yet attempted to give correct solutions in the several cases of *Contingent Annuities* and *Assurances*. These cases have been fully investigated in the fifth and eighth Chapters of my treatise above mentioned. But, in conducting those investigations, I could not avoid a frequent reference to the preceding labours of Mr. Morgan on this subject : not only with a view of censuring the culpable method which he has adopted in pursuing his inquiries ; but also, in order to obviate any objection that might be made to *my* formulæ, *because* they do not correspond with *his*. It is needless, however, in this place, for me to add to the com-

* The *Philosophical Transactions* not being within the reach of every person, Mr. Morgan has inserted his *formulæ*, for the solution of the several problems here alluded to, in the last edition of Dr. Price's *Obs. on Rev. Pay.* note (P). But, the errors of the *original* are multiplied in the *copy* : and Mr. Morgan, if he studies his own reputation as a mathematician, had better expunge them altogether in future, than suffer them to remain in their present *worse than useless* state.

ments which I have already made in the two chapters above alluded to.

But, I must apologize for the length of these remarks. Much of my time is taken up in answering questions, which are laid before me for solution, relative to Annuities and Assurances. Those solutions are oftentimes different from such as arise from the ordinary rules and methods laid down by preceding writers: and it is on this account that I have been more particular in my inquiries on this subject; as well as desirous of explaining the cause of the difference, in order to remove any doubt as to their accuracy or propriety. The theorems, from which my practical rules are deduced, are strictly and mathematically demonstrated in my *Doctrine of Life Annuities and Assurances*: and in the *numerical* enunciation of those rules (when applied to the solution of such cases as are submitted to my consideration) I discard the *indiscriminate* use of the Life Annuity Tables, deduced from the *Northampton* Observations; so generally adopted by the different Assurance Offices, and so much recommended by their immediate supporters. The motives, which have influenced me in this determination, it is unnecessary here to enter into: since

they are fully explained in the work above mentioned. And I can only add that they will continue to be my rule of conduct, as long as I am appealed to, by the public, as an arbiter on these subjects.

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January 1, 1810.

Throgmorton Street

AN
ACCOUNT
OF THE
LIFE-ASSURANCE COMPANIES.

The Amicable Society.

THE first establishment of this kind, in point of time, is the *Amicable Society* for a perpetual Assurance office; which was founded by a charter of Queen Anne in 1706, at a period when the subject of Life Assurances was but little understood. Its original plan was consequently in many instances exceedingly defective, absurd, and inequitable: and, though it has since undergone several partial reforms, it is still liable to many objections. It was limited by its first charter to the disposal of shares or numbers, not exceeding 2000, held by *single* lives; and entitling to claims when they drop. For each of these shares every new purchaser paid down at entrance £7 : 10 : 0, besides £1 : 11 : 0, as the first quarterly payment of £6 : 4 : 0 per annum to be continued during his life. An annual dividend of £1 : 4 : 0 for each share was allowed to every purchaser, out of the profits of the society; which reduced the annual payment, on each share, to £5. No

one person was allowed to purchase more than *three* shares; nor were any admitted to be purchasers whose ages were below 12 or above 45: and all between those ages were admitted on the *same* terms. Every person admitted became a member: and the net annual income, *arising from all the annual payments**, was equally divided among the nominees of such members as happened to die within the year. In 1757 the society engaged that this dividend, though it might be more, should not be *less* on each share than £125; and in 1770 they guarantied that it should not be less than £150.

Such are the outlines of the plan upon which the business of this society was *formerly* conducted. Its absurdity and injustice are manifest in its two most prominent features: 1° in regulating the dividends,

* Making £10,000 when the society was full; being £5 net income on each of the 2000 shares. The *admittance money* of £7:10:0, together with such profit, interest or improvement, as the Society might be able to make, were carried to a *separate* account. In 1757 these savings had accumulated to £25,300 three per cent stock; which in 1770 had increased to £33,300. Out of this stock, the sum of £4000 Consols and £11,000 Reduced was in 1770 appropriated and set apart, together with all future savings, as a fund for augmenting the claims to the full sum of £150, whenever they fell short of that amount under the dividend directed by the charter. In 1780 the stock of the Society had been increased to £51,300; and in 1790, to £64,300 three per cent annuities, together with some property in houses. Out of this amount, the sum of £30,000 stock was appropriated in aid of the fund above mentioned: but the remainder cannot be disposed of without the consent of two successive General Courts.

among the *nominees*, by the number of members that die within the year; whereby that benefit is made to depend not on the value of the contribution, but on a *contingency*: 2° in requiring, from all the members, the *same* payments without regarding their differences of age. The utility of this institution however (defective as it is) has been virtually acknowledged, and the plan thereof sanctioned, by the grant of three subsequent charters: one in 1730, providing for the better regulation of the society; the next in 1790, enabling it to enlarge the number of its members to 4000*; and the last in 1807, whereby the society is enabled to render itself more extensively useful, and whereby it has obtained several other powers for the better regulation and conduct of the business of the corporation.

By this new charter the society is enabled to grant *twelve* shares on each life at any age between 8 and 67. It is also empowered to proportion the premiums on

* When the Society, in 1770, guarantied that the dividend on each share should not be less than £150, the number of subscribers increased very considerably: the natural consequence of which was, (in a Society so constituted) that, for the first 10 or 15 years, the dividends rose from £150 to £200; and in some years even to £300. A similar rise was produced from the increase of the number of shares, by the charter of 1790: but these effects were *temporary* only, and necessarily ceased with the cause that produced them. They were sufficient however to *prove* to the Society the absurdity of their plan, had they been disposed to profit by experience. Of late years, the dividend has been gradually decreasing; but it is *now* fixed that it shall not be less than £180.

admission, and the annual contributions for each share, to the age and other circumstances of the parties on whose lives the Assurance is made; with further power to grant (when applied for by the parties) Annuities in lieu of the amount insured, or in lieu of policies which it may be desirable no longer to continue. The *whole* of the annual contributions for every share granted previous to this charter, and *seven-eighths* of the contributions on shares subsequently granted, are to be divided every year amongst the claimants by deaths which happen in that year: and the corporation now engages that each share (although it may be more) shall not produce *less* than £180.*

The several charters provide that the joint stock,

* The following are some of the *Rates*, on which persons are now admitted to become shareholders, according to the ages of the lives assured.

| <i>Ages.</i> | <i>Premium on Admission.</i> | | | <i>Annual Payments.</i> | | |
|--------------|------------------------------|------|-----|-------------------------|------|-----|
| | £ | s. | d. | £ | s. | d. |
| 15 | 1 | : 11 | : 6 | 3 | : 10 | : 6 |
| 20 | 1 | : 14 | : 6 | 4 | : 0 | : 6 |
| 25 | 1 | : 17 | : 0 | 4 | : 9 | : 0 |
| 30 | 1 | : 19 | : 6 | 4 | : 19 | : 0 |
| 35 | 2 | : 2 | : 6 | 5 | : 11 | : 6 |
| 40 | 2 | : 5 | : 0 | 6 | : 7 | : 6 |
| 45 | 2 | : 9 | : 0 | 7 | : 7 | : 0 |
| 50 | 2 | : 13 | : 0 | 8 | : 12 | : 0 |
| 55 | 2 | : 16 | : 6 | 10 | : 4 | : 0 |
| 60 | 3 | : 1 | : 6 | 12 | : 6 | : 0 |
| 65 | 3 | : 6 | : 6 | 15 | : 6 | : 0 |

The annual payments are to be made *half* yearly; and the *first* half yearly payment is to be made at the time of admission.

raised by the accumulation of the reserve found necessary for the security of this guarantee, is to be improved for the benefit of all the members, according to their respective interests: and no division of this capital is to be made, otherwise than in the payment of claims on death, without the consent of two successive General Courts of the members of the corporation. And the Society is now enabled to effect assurances *for any number of years, or on the joint continuance of lives, or on survivorships, or on any other contingency of life.**

The Royal Exchange, and London Assurance Companies.

The *Royal Exchange Assurance Company* was formed about the time of the South Sea Bubble; and is one of the few projects which has survived that troublesome period,† and preserved its credit to the present day. It was established by charter dated June 22, 1720, under the name of *The Royal Exchange*

* No table has yet been published of the terms on which *these* Assurances are effected.

† Out of above *two hundred* visionary schemes, that were formed and *carried into effect* at that time, only *four* exist at present! viz. the Royal Exchange Assurance Company, the London Assurance Company, the York Buildings Company, and the English Copper Company. See Macpherson's *Annals of Commerce*, vol. iii, page 99.

Assurance, for insuring ships and goods at sea, or going to sea, and for lending money on bottomry.

This charter was granted by virtue of an Act of Parliament (6 Geo. I, c. 18): but in the following year (April 29, 1721) the king (by virtue of his prerogative) granted them another charter for the Assurance of *Lives* and against casualties and accidents by fire, under the name of *The Royal Exchange Assurance of Houses and Goods from Fire.*

The *London Assurance Company* had a similar origin, and was incorporated in consequence of the Act above mentioned. It is also empowered to grant Assurances on *Lives.*

In addition however to the powers and privileges, which are common to both these Companies, the *Royal Exchange* was further authorised and enabled (by Act 33 Geo. III, c. 14) to sell and purchase *Annuities* either immediate or reversionary, under certain restrictions: and for the purposes of that act only they are (over and above the names by which they were before styled) to assume the name of *The Royal Exchange Assurance Annuity Company.* In order to render full security to the *Annuitants* under this act, it is provided that the money received for the annuity shall (as often as it shall amount to £1000) be laid out in government security; the interest or dividends on which, the Corporation may from time to time receive: but they are prohibited from touching any part of the *principal* till the extinction of the life on which the annuity is granted. And for the sake of preventing

any fraud in this respect, it is enacted that the time and place of the death and burial of each annuitant shall be inserted twice at least in the London Gazette: and that a certificate of such death or burial, with an account of the annuity depending, shall be left at the Office in London; to be inspected, without fee or reward, by any person interested in any annuity granted by virtue of that act. And it is likewise further enacted, that no agreement for the *selling* or *purchasing* of any annuity shall be valid, unless at the price stated in a Table which is directed to be hung up in some conspicuous place in the Office; and which table shall be remaining in the Office at the time of granting the annuity.

It is difficult to discover upon what principles this Corporation has deduced its table of the *Rates* of Life Annuities.* Those rates have certainly not been deduced from any observations hitherto *published*; neither do they agree with any *probable* rate of human mortality: but seem to have been formed at random, without any regard to the true principles of the science. The values for all the lives *under* 50 years of age are much too *low*, even when compared with *M. De Parcieux's* Observations, at 4 per cent: but, *above* that age, they err *considerably more* from the true value, in the *contrary* extreme. If however their rates be

* Their rates of Life *Assurances*, as well as those of the *London Assurance Company*, are the same as those adopted by *all* the other Offices: of which I shall speak hereafter.

compared with those proposed by Government (as explained at the end of this pamphlet), they will be found *altogether too high*: and few persons, who are enabled to accept the proposals there alluded to, will be disposed to sacrifice so considerable a difference by *purchasing* an annuity at the Office of the Royal Exchange Company: or indeed at any other Office whose terms have yet been published.

The Equitable Society.

These were the only three Companies for granting Life Assurances till the establishment of the *Equitable Society* in 1762;* which was formed in consequence of Mr. Simpson's lectures, recommending such an institution. It appears likewise that Mr. Dodson was active in recommending the plan of this society; and composed some tables for its use. It is truly deserving the name which it has assumed: it being certainly one of the most *Equitable*, as well as the most important, of all the societies that have ever yet been formed for the purpose of granting Assurances on lives.

By its constitution, the Assured are *mutual* assurers

* Several Societies however had been formed, and still exist, for the purpose of assuring the lives of a *particular class* of the community; such as Naval and Military men, Clergymen, Schoolmasters and others. But it is not my intention to enter into any inquiry on the principles whereon *these* Societies have been established.

one to the other; and participate equally* in all the profits and advantages of the concern. These profits are estimated from certain periodical† valuations of all the claims upon the society, compared with its present assets.‡ One third of the clear surplus stock is then set apart as a fund for the permanency and future security of the concern.§ But, the remaining two thirds are divided amongst the assured; and the amount of each person's share (estimated in proportion to the time that he has been a member) is added to his policy: so that his representatives will, at his decease, probably receive considerably more than the

* This applies only to those persons who are assured for the whole continuance of their lives: that right has not yet been extended to those who are assured for a term of years, except a Bonus should happen to be declared during the term for which the assurance is made; which, in most ordinary cases, can be but a partial advantage.

† The period of ten years (which has been adopted by the Society) is certainly too great an interval; since few persons can expect to enjoy the full value of their interest in the concern. A new plan, however, has just been adopted by the Society (which I shall presently mention) that will in some measure remove this objection.

‡ See the method of making these valuations in Question XXXIV, page 457 of my Treatise on *Life Annuities and Assurances*.

§ When it is considered that this reserved third is continually improved at interest, to the end of the next period, for the use of all the members, and then merges into the general stock to be again divided; it will appear that a person assuring at the Equitable Society, in its present established state (with its reserved third in abeyance) receives nearly the whole of his share of the current profits of the concern.

original sum insured. That this has hitherto been the case will appear from the following statement.

In the year 1786, the addition of $1\frac{1}{2}$ per cent on the sum assured, which had been made to the claims in 1782, for every annual payment prior to that year, was increased to $2\frac{1}{2}$ per cent. In the years 1791, 1793, and 1795, still further additions were made; amounting together to 4 per cent. In the year 1800, another addition, of 2 per cent, was made to the claims: and we have just seen a still further bonus declared, of $2\frac{1}{2}$ per cent per annum, on all claims from assurances effected before December 7, 1809. So that at this time, the assurances of the year 1800 are increased by the addition of 25 per cent; those of 1790 are increased by 86 per cent; those of 1780 are increased by 180 per cent; those of 1770 are increased by 290 per cent; and those of 1762 are increased by 378 per cent. Or, in other words, (for I cannot be too explicit upon this important subject,) the executors of a person assured at this Office in the year 1800, for the sum of £1000 only, will on his decease be entitled to the sum of £1250: but, if the assurance has been effected in 1790, they will be entitled to £1860: if in 1780, to £2800: if in 1770, to £3900: and if in 1762 (when the Society was first established) they will be entitled to the enormous sum of £4780. Now, at no other Office (with the exception of the partial advantages derived from assuring at one or two of the Societies hereafter mentioned) would the executors be entitled to receive a shilling more than the

sum of £1000 originally assured. Surely these *facts* speak sufficiently for themselves; and show, most decidedly, the impolicy of assuring at those Offices whose sole object is gain, and who consequently make no return of their immense premiums.

But the most important alteration in the plan of this Society was that which was brought forward and proposed at the General Court held December 7, 1809: where it was resolved that in future the addition of 2 per cent on the sum assured should be made to each existing policy *at the end of every year*, for the next 10 years: at the end of which period another valuation is to take place, when the surplus profits of the Society (after allowing for the bonus just alluded to) will be divided amongst the existing policies, in the usual manner. So numerous however were the applications for admission into the Society, on this proposal being made known to the public, that it was thought necessary and proper to amend it. At the next General Court (December 19, 1809) it was therefore resolved to limit this advantage to the persons *already* assured at the Office, and to such claims *only* as should arise prior to the next division of profits. Consequently, by this new plan, the executors of a person already assured at this Office will be entitled to receive (in addition to any other bonus which may have been declared) 2 per cent (on the original sum assured) for every year which has transpired since the date of the last division of profits and the time of his death. But, this benefit is not *yet* extended to members effecting assurances *subsequent* to the date above mentioned.

The proceedings of this Society have hitherto been founded on a firm and durable basis: and the Directors* have, in their management of it, shown the greatest prudence and discretion. Guiding themselves by the light of mathematical science (without which no establishment of this kind can be ever upheld) they have taken no step which can at all hazard its permanency or safety: ‘and, in order to secure the same prudence and discretion in the future conduct of its members, the Society has provided by certain laws, “ That no allowance to claimants shall ever be made “ without a previous investigation of its affairs, and “ the concurrence of *four fifths* of its members at “ three successive General Courts; and also that such “ allowance shall in no instance exceed *two thirds* of “ the clear surplus stock of the Society.” By these restrictions, as far as human precaution can operate, the danger of intemperate measures is avoided: and there is every reason to hope that an institution, founded on such liberal principles and defended by such wholesome provisions, will not only be secure, but continue to improve in credit and prosperity.†’

* The Directors are chosen annually by the members of the Society: and four General Courts are held in the year; at which are exhibited accounts of the state of the Company, and at which are formed such rules and regulations as may be deemed necessary for its advancement. Thus, the whole body of the members have a voice in the administration of the affairs of this Society.

† See the history of this Society, brought down to the present time, in Price’s *Obs. on Rev. Pay.* vol. 1, Chapter II, Section 7.

Other Societies.

Soon after the establishment of the Equitable Assurance Company a number of societies sprang up, (all about the same time*), which assumed the false and alluring title of Institutions “for the *benefit* of Old Age.” These institutions were, for the most part, gross impositions on the public; proceeding from ignorance or knavery, and encouraged by credulity and folly. The promoters of them were principally persons in the more advanced ages of life, and who imagined the schemes would last *their* time: they were consequently little anxious about the *durability* of the plan, and desirous only of getting a *numerous* body of subscribers, that their plunder might be the greater. Agreeably to this principle, the founders of these societies began so low as not to require so much as a *fourth* or a *fifth* part of the values of the annuities which they undertook to pay: and encouragement was also held out to *early* applicants. These base attempts to deceive and allure the ignorant and distressed (and which unfortunately succeeded too well) first induced

* The Laudable Society, the Amicable Society of Annuitants, the Provident Society, the London Annuity Society, the Equitable Society of Annuitants, the Westminster Union Society, the London Union Society, the Consolidated Union Society, the Public Annuitant Society, the Rational Society, the Friendly Society of Annuitants, and many others (whose names are now lost or forgotten) were all established about the year 1770 and 1771.

Dr. Price to publish his *Observations on Reversionary Payments*. “ On the first appearance however of this
 “ work, the rage for establishing *new Societies* imme-
 “ diately subsided ; a *partial* reformation took place
 “ in some of those which had been already formed ;
 “ and in a short time the greater part of them, con-
 “ vinced of their mistakes, dissolved themselves. A
 “ few, indeed, persevered in an obstinate adherence
 “ to their original plans ; but they have long since
 “ exhibited a melancholy proof of their own folly,
 “ and of the truth and justice of the admonitions which
 “ had been wasted upon them.* ”

The general practice of the promoters of those schemes was to attract the weak and credulous by holding out the most easy and advantageous terms. These arts succeeded wonderfully well at first ; till the public became better informed on the subject ; when they soon fell into disrepute and contempt. But although such specious proposals should always be viewed with suspicion, the public should be cautious not to fall into the opposite extreme, and suffer themselves to be enticed into the payment of exorbitant rates, under the delusive plea of stability and security. They ought to satisfy themselves that any extra charge which is made upon them (over and above the fair value, after allowing a proper and liberal compensation to the proprietors) is *sacredly* and *inviolably* appropriated to secure the permanency of the establishment, and to

* *Introd. to Dr. Price's Obs. on Rev. Pay.*

provide for those unfavourable events which sometimes arise and overturn the best contrived schemes.

Towards the end of the last, and the beginning of the present century, several new Public Companies were formed for the purpose of making Assurances on Lives, granting Annuities, &c: viz the *Westminster Society* in 1792; the *Pelican* in 1797; the *Globe* in 1799; the *Albion* in 1805; the *Rock* and the *Provident Institution* in 1806; and the *Eagle*, the *Hope*, the *London Life Association* and the *Atlas* in 1807. None of these societies however are confined *solely* to the granting of *Life* Assurances: since they all unite, thereto, the purchase or sale of *Annuities*; and five of them (in addition to the other two branches) are engaged in *Fire* Assurances. It is not my intention to enter into the nature and form of *all* these different Societies; since the major part of them do not (as far as the subject of this work is concerned) profess to hold out any peculiar advantages to the *public*.* But, as *two* of them in particular differ materially in this point from all the rest, I shall devote a few lines to their separate explanation and examination.

The Provident Institution.

The *Provident Institution* was formed in 1806, with a view “to enable the industrious and economical

* There is some trifling difference between them as to the *fees on admission*, and as to *military* persons: but, these are *paltry* considerations compared with those which I shall hereafter mention.

“ to appropriate their savings most beneficially to their
 “ different objects of prudence or affection; and to
 “ encourage that laudable disposition by affording an
 “ ample guarantee for the fulfilment of the benefits
 “ proposed, *without curtailing them by commercial*
 “ *views of profit.* With these objects *several hundred*
 “ noblemen and gentlemen have entered into a sub-
 “ scription of £250,000 to constitute an original ca-
 “ pital*; and taking upon themselves the sole re-
 “ sponsibility of the establishment, they render the in-
 “ sured and annuitants *proprietors*, and entitle them
 “ *equally* to participate in profits, after the expenses
 “ of an economical arrangement are defrayed, in which
 “ the Presidents, Directors, Trustees and Auditors
 “ act gratuitously. Thus, by the specific sum insured,
 “ and the division of contingent profits, every member
 “ of this institution has the *fullest value possible*†, for
 “ his payments, without being subject to any calls or
 “ risk whatever.”

This institution not only makes Assurances on lives,
 but also buys and sells Annuities, and grants Endow-
 ments for children. Their proposals, at first sight,
 appear to be the same as in the Equitable Society;
 since all the proprietors are stated to participate *equally*
 in the profits of the concern. There is however this
 material difference, that, in the Provident Institution,

* These subscribers are not *obliged* to insure *their own* lives, as
 is the case at *all the other* newly established Offices.

† This is a *false* assertion, as will evidently appear in the se-
 quel.

those profits are shared in conjunction with the *several hundred* noblemen and gentlemen who have *guaranteed* * the capital; and who appear not to have wholly lost sight of the *commercial views of profit* in establishing this concern †.

The Rock.

The *Rock Life Assurance Company* was formed also in the year 1806; and appears in some respects to have followed the plan of the Equitable Society: it is however in its nature essentially different. In the Rock, the assured are not *mutual* assurers one to the other: neither do they participate *equally* in the profits of the concern. For, though at certain periods (of not less than seven years ‡) an estimate is made of those profits, and two thirds of the same, *after deducting the sum of five thousand pounds therefrom* §, are divided amongst all the policies, as in the Equitable Society; yet the remaining third, instead of being improved for the benefit of *all* the parties, is appropriated

* A small portion only of the capital has been actually *advanced*.

† See some observations on the *Rates* of this Society in pages 37 and 38.

‡ The *first* division of profits, however, is not to take place till after the expiration of *twelve* years from the establishment of the Society.

§ This is provided for, in the Deed of Settlement, although it is not mentioned in the Prospectus of the Company. See a pamphlet issued by this Society under the erroneous and illusive title of *The Principles of Life Assurance explained*.

to the use of the *proprietors only*. This third part is thus for ever *lost* to the rest of the assured; and, at the end of the next period, another third part is likewise taken away: which *continual subtraction* operates in the inverse method to that pursued by the Equitable Society, and must in a course of years make a very *material* difference in the amount to be added to the policies at each respective office.*

General Observations.

With respect to the *remaining* institutions of this kind now in existence, I believe they are all formed with a view to *private* interest, and do not profess to hold out any peculiar advantage to the *public*.† It will be recollected that, a few years ago, there existed in this country a great rage for *Joint-Stock Companies*; and the public were much amused with the various proposals that daily issued from the press. The enormous profits that are made, by granting Life Assurances and Annuities, attracted the hopes and expectations of many persons; and several of the more recent Offices may ascribe their origin to these popular impressions. The success, attending the establishment of these

* It will appear from this view of the subject that a person insuring at the Rock does not stand a chance of receiving even one *half* the additional profit that he would probably obtain by insuring at the Equitable. See the note in page 9.

† See the note in page 15.

Offices, and of similar undertakings, encouraged others to come forward, not only with the like proposals, but with various fanciful schemes and visionary projects : and there was every appearance that the times of the South-Sea Bubble were about to be revived. The same measures, however, that put a stop to the nefarious practices of that period, were now resorted to: the act of 6 Geo. I, c. 18,* after lying dormant above 80 years, was applied to the correction of this public grievance ; and the decision of the Court of King's Bench, in the case of *The King versus Dodd*, put a stop to all these delusive projects. As the opinion of the Lord Chief Justice (Ellenborough) on that occasion cannot be made too public, and as it has some connection with the present subject, I shall make no apology for here inserting it.

“ This case has been very fully argued, and the application for an information has at least had this

* By that statute it was declared that all the mischievous undertakings and attempts *therein described*, tending to the common grievance, prejudice and inconvenience of his Majesty's subjects, in their trade and commerce,—and all public subscriptions, receipts, payments, assignments or transfers, for the purpose of furthering, countenancing, or proceeding in such undertakings,—and more particularly the presuming to act as a corporate body, and pretending to raise and transfer any shares in such concerns without legal authority (either by Act of Parliament or Royal Charter)—should be illegal and void. All such undertakings are declared to be a public nuisance ; and persons offending therein are not only subject to the usual fines in such cases, but are further liable to the penalties and forfeiture of the statute of *Præmunire*.

“ good effect, that it has produced a full discussion
 “ of the question, and has given a general notoriety
 “ to the existence of the statute of the 6 Geo. I: so
 “ that no person can hereafter pretend to say that it
 “ is an obsolete law; and, on that account, no longer
 “ to be enforced against such as offend against the
 “ provisions of it. After a lapse, however, of eighty-
 “ seven years since any authenticated proceeding has
 “ been had upon this branch of the act, and when
 “ other ways are still open to the party now applying
 “ to put this act in force against offenders, the Court
 “ (in the exercise of a sound discretion, under all the
 “ circumstances of the case) will forbear to interfere
 “ in this extraordinary manner. But, at the same
 “ time we wish it to be understood that it is not be-
 “ cause we think that the facts brought before us are
 “ not within the penalty of the law: but we choose to
 “ express ourselves with the greater reserve, because
 “ the defendant may still be indicted, and the Court
 “ may still be called (upon the removal of the indict-
 “ ment by *certiorari*, or upon an information filed by
 “ the Attorney-General) to give their opinion on this
 “ very case. But (independent of the general tendency
 “ of schemes, of the nature of the project now before
 “ us, to occasion prejudice to the public) there is be-
 “ sides in this prospectus a prominent feature of mis-
 “ chief: for, it therein appears to be held out that no
 “ person is to be accountable beyond the amount of
 “ the share for which he shall subscribe, the conditions
 “ of which are to be included in a Deed of Trust to

“ be enrolled. But this is a *mischievous delusion*,
 “ calculated to *ensnare* the unwary public. As to
 “ the subscribers themselves, indeed, they may stipu-
 “ late with *each other* for this contracted responsibility;
 “ but as to the rest of the world, it is clear that *each*
 “ partner is liable to the *whole amount of the debts*
 “ *contracted by the partnership*. I forbear to com-
 “ ment on lesser circumstances; such as the smallness
 “ of the sum to be subscribed in the first instance,*
 “ (which seems to carry an appearance of holding out
 “ a *lure to the unwary*) and other features in the
 “ case. But (considering that this is brought forward
 “ after a lapse of so many years since any similar pro-
 “ secution was instituted, and brought forward by a
 “ party who does not profess to have been himself de-
 “ luded by the project; and the statute having been
 “ passed principally for the protection of unwary per-
 “ sons from delusions of this kind) the Court think,
 “ in the exercise of their discretion, that they should

* Of all the Life Assurance Companies that have lately been
 established, the *Globe* is the only one that has paid up its subscrip-
 tion *in full*. The remaining ones have divided their capital into
 small shares, on which 10 per cent only has been paid. Thus, the
Eagle professes to have a capital of TWO MILLIONS; whereas it
 in reality consists of no more than £200,000, which is divided
 into 40,000 shares of £5 each. And the *Rock*, which professes to
 have a capital of ONE MILLION, is divided into 50,000 shares of
 £2 each. A similar observation will apply to most of the other
 Societies. It is true that they have reserved a privilege of making
 a *call* for the remainder: but I hope no circumstances will ever
 arise, wherein their power or pretensions may be *disputed*.

“ not now enforce the statute against this defendant,
 “ at the relation of a person so circumstanced: leaving
 “ the relator to the common law remedy by indict-
 “ ment; or the defendant to be proceeded against
 “ by His Majesty’s Attorney-General *ex officio*, if he
 “ should deem it adviseable for the protection of the
 “ public. But, the Court think it is fit that this rule
 “ should be discharged without costs. And they re-
 “ commend it as a matter of prudence to the parties
 “ concerned, that they should forbear to carry into
 “ execution this mischievous project, or any other
 “ speculative project of the like nature, *founded on*
 “ *joint-stock and transferable shares*; and we hope
 “ that this intimation will prevent others from engaging
 “ in the like *mischievous and illegal projects*.*”

With respect to the constitutions of the several As-
 surance Companies above alluded to, they are all of
 them (with the exception of the *Amicable* and *Equi-*
table Societies) in one particular nearly the same. In
 each of them the Assured may be divided into two
 classes, Proprietors and Non-Proprietors. The former
 are those who hold shares in the concern and who di-
 vide all† the profit among themselves: and the latter

* East’s Reports, in Easter Term 1808, vol. ix. page 525.

† This must be taken with some limitation as far as it regards
 the *Provident Institution* and the *Rock*; agreeably to what I have
 above stated, when speaking of those companies. There is also
 the following advantage held out by the *Hope* Insurance Company:
 viz. “ Persons, not being proprietors, who insure for £500 upon
 “ their own lives, will, upon the payment of ten shillings per cent

consist of such other persons as have been induced from *ignorance, persuasion, or necessity* to effect assurances at those Offices; and who (although they pay the same premium on their policy as at the Equitable Society) will never receive a shilling more than the sum originally insured.

For, it is necessary here to remark (and I think it an observation of considerable importance) that the *rates* of Assurances on lives do not differ, in the least, at any of the Offices: so that whether a person makes an assurance at the Equitable Society where the sum assured is continually *increasing* in value,* or whether he effects it at any other Office where no additional advantage is derived, *he pays precisely the same premium!* Surely this important fact cannot be sufficiently known by the public, else it is difficult to conceive how any of the newly established Offices should ever have been able to extend their business beyond the limits of their own proprietary.†

“ (on their admission) beyond the premium paid for the Assurance,
 “ be entitled, out of the profits of the Life Fund, to such interest
 “ or dividend as may be paid on a £50 share to the several pro-
 “ prietors thereof; and so on in like manner for every £500 so
 “ insured. But in no case whatever are they to be responsible
 “ for any claims which the Life Fund may be called upon to pay;
 “ the Capital of the Company being of sufficient magnitude for
 “ that purpose.”

* See page 10.

† Every *proprietor*, in all these newly established Societies, is *obliged* to insure a given sum on his own, or on some other person's life.

Independent, however, of the superior *advantage* of insuring at the Equitable Society, there is a satisfaction arising from the consciousness of its superior *security*.* This security originated from, and is principally maintained by, the power which each member possesses (in his own right) of giving his vote and opinion on all the proceedings of the Society: so that no unfair advantage can be taken by any particular class of the assured. On the contrary, at all the other Offices† the management of the concern is in the hands of the Proprietors *only*: and the Non-Proprietors (or those who assure at the office without holding any share) have no voice whatever in the administration of the affairs of the Company. They may see the proprietors voting large dividends amongst themselves, and the capital of the society (which ought to be improved with the greatest economy) annually dwindling away: but, though this should be apparent to the most common observer, they would be, in a great

* A person who makes an Assurance against *Fire* is content if the Office, at which he insures, possesses the *present* confidence of the public and of himself: since he may remove his policy to any other Office *whenever* he doubts its stability or responsibility. Not so with a *Life* assurance: for, a policy of that kind, once entered into, cannot be removed without considerable loss and inconvenience to the party; and, as the *claim* may not become due for 20, 30 or 40 years (nay, perhaps for more than half a century) it therefore particularly behoves him to be satisfied not only with the *present* flourishing state of the society but with the prospect of its *permanency* and *future solvency*.

† Excepting the Amicable Society.

measure, unable to relieve themselves. For, most persons, after continuing the payments on their policies through a series of years, would think it too serious an injury to withdraw; and would rather risk the issue of the event.

Now, though I by no means wish or intend to cast any reflection on the present managers of any of the more recent Societies, many of whom I *know* to be men of strict honour and integrity, and who (considering themselves equally trustees for the *public* as for the *Society*) would not give their sanction to any measure that was likely to endanger its security, or hazard its reputation; yet *their* voice may not always prevail against a numerous body of proprietors, neither can *their* services be perpetuated. And the sad experience of almost all preceding establishments of a similar kind, which have been formed with a view to the benefit of posterity, shows that this is not an *imaginary* evil only:* and that it becomes *every* person connected with such Societies to be particularly cautious that no attempts are made, either through ignorance or design, to risk the security of the establishment by grasping too eagerly at immediate or enormous profits. They should bear in mind the advice that was given to the Directors of the Equitable Society by a celebrated

* Let any person read the nefarious practices alluded to by Dr. Price in his *Observations on Rev. Pay.* and by Mr. Dale in his *Calculations deduced from first Principles*; he will then be convinced that the members cannot keep too vigilant an eye over the proceedings of their society.

writer on these subjects, and the adoption of which has tended to raise that establishment to its present state of eminence. “ They should consider what distress would arise from the failure of the concern at any future time ; and what are the dangers which ought to be carefully guarded against in order to secure success.”——“ That it is not to be expected that any society can meet with difficulties in its infancy ; because, not till the end of many years, after it has acquired its *maximum* of members, will the *maximum* of yearly claimants and annuitants come upon it. Should it, therefore, through inattention to this remark, and the encouragement arising from the possession of a large surplus, be led to check or stop the increase of its stock [or to divide the profits of the concern] *too soon*, the consequences might be highly pernicious.*”——“ That it is of great importance to the safety of such a society that its affairs should be under the inspection of able

* The distinguishing principle of the *London Life Association* is, that the profits resulting from its transactions shall be shared by the members *during life*: whereby the security of that establishment must be considerably impaired. For, “ in matters of chance it is impossible to say that an unfavourable run of events will not come, which may hurt the best contrived scheme. The calculations only determine *probabilities*; and agreeably to these it may be depended on that events will happen *on the whole*. But, at *particular* periods, and in *particular* instances, great deviations will often happen; and these deviations, at the commencement of a scheme, must prove either very favourable or very unfavourable.”

“ mathematicians. Melancholy experience shows that
 “ none but mathematicians are qualified for forming
 “ and conducting schemes of this kind. In short;
 “ dangerous mistakes may sometimes be committed,
 “ if the affairs of such a society are not managed fru-
 “ gally, carefully, and prudently.*”

Rates for Life Assurances.

I cannot dismiss this subject without some obser-
 vations on the *Rates* of Life Assurances published
 by the several Companies above alluded to: and, as
 those rates are the *same* in all, my remarks will *equally*
 apply to each of those different societies; excepting
 perhaps the *Equitable*, the nature of whose establish-

* Price's *Obs. on Rev. Pay.* vol. 1, page 179. The same author
 (in pointing out, in another place, the dangers to which a Society
 of this kind is exposed) remarks, “ that there are no questions, the
 “ solution of which requires a stricter attention, or greater skill in
 “ investigation, than some in the doctrine of Assurances. Difficult
 “ questions are sometimes brought to the Society; and the Di-
 “ rectors, not being themselves mathematicians, are under a ne-
 “ cessity, in making their demands, of being governed by their
 “ Actuary: and should he happen to be unqualified, he must make
 “ mistakes, and either the Public or the Society will be injured.
 “ In short, the Society can scarcely be sensible enough of the
 “ importance of both abilities and probity in the servants it em-
 “ ploys: nor, therefore, of the particular reason there is for guarding
 “ their places against the applications of candidates who, on any
 “ future vacancies, may endeavour to intrude themselves by their
 “ connexions or influence.”

ment renders it not of so much moment what the rates are, provided every member pays in proportion.* The promoters of that concern showed their sound judgment and good sense in adopting such tables of the probabilities of life as were rather *below* than *above* the truth. They first made use of Mr. Simpson's Table for *London*; but, finding these too inaccurate, they changed them for the *Northampton* Table. Experience has confirmed the propriety of their choice; but, at the same time, has proved to us that the *Northampton* Table is by no means a *corret* index of the rate of human mortality amongst the members of such a society.† It has, however, been adopted by all the *other* offices, under the delusive plea that “experience
“has shown it to be the most just and liberal scale,
“whereby to estimate a fair value between the two
“parties.” But, however applicable the *Northampton* Table may be to the use of a society *constituted as the*

* I should likewise except the *Amicable Society*, whose plan and constitution differ so materially from the others.

† Mr. Morgan says (Price's *Obs. on Rev. Pay.* vol. 1, page 183) that the decrements of life in the Equitable Society, from the year 1768 to 1800, compared with the decrements of life in the *Northampton* Table, appear to have been from the age of

| | |
|-------------------|------------------------|
| 10 to 20 | in the ratio of 1 to 2 |
| 20 .. 30 | 1 to 2 |
| 30 .. 40 | 3 to 5 |
| 40 .. 50 | 3 to 5 |
| 50 .. 60 | 5 to 7 |
| 60 .. 80 | 4 to 5 |
| All ages together | 2 to 3 |

Equitable is, it certainly is not entitled to the same degree of approbation as affording a fair estimate of the value of annuities and assurances between the public and a *trading* company; nor even as between two individuals, unless under particular circumstances. A more just and equitable scale *ought* to be adopted by those societies who do not make any return to the assured, of the vast profits that arise from this species of daily traffic; and would tend more to the increase of their business in this way, and would likewise be more honourable to themselves, than the disgraceful practice of *bribing* solicitors, agents and others to effect assurances at their Offices: thereby notoriously inducing those parties to *sacrifice* the interest of their employers and their friends.* For, the money which is applied to this base purpose can be considered in

* Many of the public Companies, who do not make any return of the profits to the assured, allow a *liberal premium* (generally 5 per cent on the payment made) to any person who will procure an insurance to be effected at their Office: and this commission is *also* allowed to *any* person who makes the *annual* payment *provided it be not the party himself!!!* An artifice which is easily seen through: but which opens such a door to fraud and imposition, that it cannot be too severely reprobated. And however much it may be sanctioned by the Directors in their *public* capacity, we are all aware what their emotions would be if they discovered any of their tradesmen tampering with *their own* servants in this opprobrious manner: since they must well know *who* would eventually pay for it. I omit to give the names of those companies who have adopted this nefarious practice, under the hope that such a mean and improper artifice will not be encouraged in future.

no other light than as *unjustly* taken from the pockets of the *assured*; and would be more properly and more equitably employed in being appropriated towards a reduction of the rate of assurance: since, if the Company can afford to allow it to the *agent*, it surely can afford to allow it to the principal; and it evidently belongs more *justly* to the latter than to the former.

The Tables of the *Rates* of Life Assurances, as published by the several Companies, are precisely the *same* in each; and are usually *three* in number: viz. one for *Single* lives, one for *Joint* lives, and the other on the *Contingency* that one life shall die before another life.* These rates are all deduced from the *Northampton* observations, and at the rate of *three* per cent interest. By thus computing the values from the *lowest* probabilities of life, and at the *lowest* rate of interest, the Rates become, in most cases, full a *third* more than they ought to be when calculated from the more correct tables of the probabilities of life as observed in *Sweden*, at the rate of *four* per cent interest; and still more do they differ from the true value as deduced from the probabilities of life as observed by *M. De Parcieux*, at the same rate of interest.

* These Tables may be had at any of the Assurance Offices, and on comparing them together they will be found to be all alike; there being only a trifling difference of a *penny* or *two-pence* per cent in any of them; which is sometimes in *excess* and sometimes in *defect*.

Now, since the rate of human mortality, amongst the members assured at such Societies, is by no means correctly indicated by the *Northampton* * table of observations, but approximates more nearly to the observations made in *Sweden*, or to those made by *M. De Parcieux*, the public may form a tolerably correct idea of the immense† profit that is made by this species of daily traffic ; and may learn, to their own cost, the impolicy of insuring at those Offices whose sole object is gain, and who consequently make no return of any part of these exorbitant demands. A single instance will illustrate this.

A person aged 20 is desirous of assuring his own life for £5000 : the sum demanded for this purpose by *all* the Assurance Companies is £2140 : 2 : 0. But the true value of such sum, as deduced from the *Sweden* Observations, is no more than £1422 : 10 : 0, if we take the rate of interest at 4 per cent ; and no more than £1128 : 10 : 0, if we take the rate of interest at 5 per cent : or when deduced from the observations of *M. De Parcieux*, it is no more than £1358 : 2 : 0, taking interest at 4 per cent ; and no more than £1078 : 16 : 0, taking interest at 5 per cent. A person, therefore, of this age who insures the above sum at any of those Offices, which make no return of any part of the pre-

* It is in the ratio of only 2 to 3. See the note in page 28.

† Some idea may be formed of these enormous gains, from the large sums which have occasionally been added to the policies at the Equitable Society ; and which have amounted to above *one million and a half* in present money. See page 10.

mium, may be considered as *throwing away* between seven hundred and a thousand pounds *. I say that this sum is thrown away by insuring at *such* Offices, because, by effecting the same assurance at the *Equitable Society*, the money thus paid down is carried to a common stock, and the *whole* † of the profits of the concern (after the expenses of an economical establishment are defrayed) are from time to time divided amongst *all* the persons assured, and added to their policies : so that the executors of a person assured at *that* office have a chance of receiving (at his death) *considerably more* ‡ than the sum originally insured. The public, I presume, are not aware of this important fact ; otherwise it is difficult to conceive how the other

* These calculations are deduced from the supposition that the *whole* premium is paid down immediately in *one payment* : but, nearly the same differences will arise if we suppose the premiums to be made *annually*. For the annual payment which would be required, by all the Offices, for the assurance above alluded to, is £108 : 19 : 0 : whereas the value of the same, deduced from the observations of *M. De Parcieux*, is £71 : 14 : 3, if interest be taken at 4 per cent, and only £65 : 10 : 0, if interest be taken at 5 per cent.

† Every person now insuring at that Office may be considered as partaking of the *whole* of the profits of the concern ; for the reasons given in the note in page 9.

‡ They have a chance of receiving considerably more, for two reasons : in the first place the Society can generally make more than *three* per cent interest of their money ; and secondly, the lives do not die off so fast as the computations suppose. So that the money is not only improved at a better rate of interest, but also for a longer period.

Offices should ever have been able to effect a single policy, except such as the Equitable Society had refused.

The same observations will apply to the case of *Joint* lives; since the values are here also deduced from the *Northampton* table of observations, and at the rate of *three* per cent interest. But, if we take the case of *Contingent* assurances (that is, of an assurance made on a given life, or the contingency that it dies before another) we shall find still greater cause for censure. For, independent of the rates being computed from the *lowest* probabilities of life and at the *lowest* rate of interest, they are also deduced from a rule given by Mr. Simpson *, which produces a result that is oftentimes more than *one third* of the true value too much, even when computed from the *Northampton* table, at 3 per cent interest!—A single instance will confirm this also.

A person, 10 years of age, is desirous of assuring the sum of £100 on his life, on the contingency that he dies before another person aged 60. The sum which would be demanded by *all* the Assurance Offices (not even excepting the *Equitable*) is £12:18:6 in a single payment, or £1:6:0 in annual payments during the joint lives. But the true value which *ought* to be given for the same (even on the supposition that the rate of interest is *no more* than 3 per cent, and the probabilities of living the *same* as observed at *North-*

* See his *Supplement*, Prob. XXXII.

ampton) is only £10: 13: 0* in a single payment, and £1: 1: 5 in annual payments: consequently the Offices demand about a *fourth* part of the true value more than (on their own data) is just and equitable. If the value, however, had been deduced from the probabilities of living as observed by *M. De Parcieux*, and at the rate of $4\frac{1}{2}$ per cent interest, it would be £9: 3: 1 in a single payment, and only *eighteen shillings and ninepence* in annual payments: which makes the Office rate, in this case, nearly one *half* the true value too much!

Mr. Morgan has taken considerable pains to prove that Mr. Simpson's rule for finding the value of these contingent reversions is *exceedingly defective*†; and that it oftentimes leads to conclusions too erroneous to be overlooked. Now, since the *true* values can in all cases be obtained with so little trouble, it is somewhat singular that the incorrect values, in the third Table above alluded to, should still be adopted (not only by the *Equitable Society*, but also by every other Office in London) for the purpose of determining the sums that

* I take this sum from Mr. Morgan's calculation in *Phil. Trans.* for 1788, page 344; who says that he has compared it with the sum deduced from the *exact* values of annuities on the joint lives involved in the solution.

† See *Phil. Trans.* *ibid.* The *singular* formula however, from which Mr. Morgan has deduced his values, has at length been amended by him in the *last* edition of Dr. Price's *Obs. on Rev. Pay.* Note (O). See what has been said in the note in page 187 of my *Doctrine of Life Annuities and Assurances*.

are required for effecting assurances on the contingency here mentioned. Amongst the numerous societies that have lately been established, is there no one Actuary that has the confidence to propose a *new* table of the value of such assurances, *founded on a true and proper basis* : or *will* the several Companies still persevere in their unjust and illiberal demands? Surely their profits must be sufficiently great by taking the *lowest* rate of interest, and the *lowest* probabilities of living as the basis of their calculations ; without adding thereto the *unfair* advantage arising from the use of *inaccurate rules* *.

The following tables (given by Mr. Morgan himself†) of the present value of £100 payable on the decease of A, provided B be then alive, will show
 “ how far Mr. Simpson’s approximation, the only rule
 “ now in use [*by the Assurance Offices*], may be de-
 “ pended upon.”

* These observations will, in a great measure, apply also to the Equitable Society ; since those, who assure on this contingency, pay more *in proportion* than the rest of the members : and it is curious to observe how servilely the *other Offices* have followed their example. See what has been already said upon this subject in the note in page 188, of my *Doctrine of Life Annuities and Assurances*.

† See *Phil. Trans.* *ibid.*

Interest 3 per cent, *Northampton* Observations.

| Age of A | Age of B | Value by Simpson's rule. | Value by correct rule. | Age of A | Age of B | Value by Simpson's rule. | Value by correct rule. |
|-------------|-------------|--------------------------------|------------------------------|-------------|-------------|--------------------------------|------------------------------|
| 10 | 10 | 24.75 | 24.75 | 20 | 20 | 27.96 | 27.96 |
| 10 | 20 | 23.50 | 22.11 | 20 | 50 | 19.29 | 18.65 |
| 10 | 30 | 21.47 | 19.84 | 30 | 30 | 30.21 | 30.21 |
| 10 | 40 | 19.07 | 17.10 | 30 | 60 | 18.19 | 17.51 |
| 10 | 50 | 16.21 | 14.04 | 40 | 40 | 32.87 | 32.87 |
| 10 | 60 | 12.93 | 10.65 | 40 | 60 | 22.78 | 21.92 |
| 10 | 70 | 9.15 | 7.07 | 40 | 70 | 15.78 | 15.35 |

Interest 4 per cent, *Sweden* Observations.

| Age of A | Age of B | Value by Simpson's rule. | Value by correct rule. | Age of A | Age of B | Value by Simpson's rule. | Value by correct rule. |
|-------------|-------------|--------------------------------|------------------------------|-------------|-------------|--------------------------------|------------------------------|
| 14 | 20 | 17.82 | 15.42 | 40 | 40 | 26.99 | 26.99 |
| 16 | 40 | 16.23 | 13.71 | 40 | 76 | 9.81 | 9.21 |
| 20 | 20 | 19.84 | 19.84 | 42 | 60 | 19.58 | 16.11 |
| 24 | 60 | 13.01 | 9.39 | 52 | 76 | 14.00 | 12.58 |
| 28 | 40 | 20.44 | 17.60 | 60 | 60 | 36.34 | 36.34 |
| 36 | 60 | 16.81 | 12.29 | 64 | 76 | 22.81 | 23.81 |

It will be seen by this comparison that, when the ages of the two lives are *equal*, the exact values are found by either rule *: but when there is any considerable inequality between the ages of the two lives, the values by Mr. Simpson's rule are in many cases

* Owing to some strange error in his calculation, Mr. Morgan has made the values deduced from Mr. Simpson's formula (according to the Sweden observations and when the lives are equal) *different* from those obtained by the correct rule: whereas it must be evident, by an attention to the rule given by Mr. Simpson, that they ought in such case to be *precisely the same*. The correction of this error is the only alteration I have made in the Table.

so wide from the truth, as to show the impropriety of their being used by any office, *professing* to be guided by mathematical principles.

Rates for the Endowment of Children.

In the table of rates published by the *Globe Assurance Company*, and by the *Provident Institution**, the sums demanded for the Endowments of Children are in general full as much as (and from the age of 9 years and upwards are even *more* than) the present values, at 5 per cent, of £100 *certain* to be received at the end of the given term *without any contingency*. For instance, £62 : 11 : 2 is required in ready money by the *Globe*, and £62 by the *Provident*, for the payment of £100 on the event of a child, aged 11, arriving at the age of 21 years: whereas either of these sums put out to interest at 5 per cent would amount to *more* than £100 at the end of that period, without the liability to loss in case the child should happen to die before that time!!! No person can, I think, be so blind to his own interest as to risk his money in this absurd way.

Rates of Life Annuities.

The observations which I have just made will

* The other Companies have not published *their* rates for the Endowments of Children: but, from the similarity of most of the rates at the various Offices, we may conclude that there is no great difference on this point.

apply with equal force to the terms on which the *Provident Institution* grants *deferred* Life annuities. For instance: the sum of £116 : 8 : 0 is demanded for an annuity of £20 on the life of a person, now aged 20, to commence when he is 40 years of age. Now the value of the same annuity, on the life of a person aged 40, is (at the same Office) estimated at £296. But £116 : 8 : 0 put out to interest at 5 per cent for 20 years would amount to £308 : 16 : 10; or to near £13 *more* than the sum for which he might *then* obtain the same annuity, without the risk of losing his money *in the mean time!!!*

With respect to the value of Life Annuities in general, at this Office, (and which is the only one, except the Royal Exchange, that has hitherto published its rates,) I would observe that, like the values adopted by that Corporation, they are too *low* in the younger, and too *high* in the older periods of life. The cause of which anomaly is too apparent: since life annuities are generally purchased by those of more *advanced* ages, and are seldom resorted to by the *young*. I would however remark that those persons who are desirous of *purchasing* annuities on their own lives, or on any other person's life, or on two lives with benefit of survivorship, have now * an opportunity of doing it with

* In my *Doctrine of Interest and Annuities*, page 106, I suggested the propriety and advantage to Government in exchanging some of the Public Stocks for *Life* Annuities: and I proposed to enter more at large on this subject at some future opportunity. But, as that plan has since been adopted on so fair and liberal a scale, I can only add my best wishes for its success.

much greater security and advantage, than at *any* of the Offices above alluded to. For, by the act 48 Geo. III, c. 142, any person may exchange *Reduced* or *Consolidated* 3 per cent stock for an annuity on the life of a nominee not younger than 35 and not older than 75 years of age. And as the terms, on which this exchange can be made, are always more advantageous to the party than by a direct purchase of such annuities at any of the Offices; it is probable that this plan will, for the future, be the only one resorted to, in such cases, as long as it remains in effect*. This observation, however, applies only to such persons as wish to *purchase* annuities. But there are many others who are obliged, from various causes, to *sell* or grant annuities on their own, or on other persons', lives: and several of the Offices are in the habit of purchasing the same; or, of advancing money on such contingencies.

* The *rate* at which the exchange can be made depends on the price of the stock on the day *preceding* the day of transfer: and the exchange may be effected at any time when the price of the 3 per cents is between 60 and 81; the terms varying according to every *one per cent* difference in the market price of the stock. The limits of this work will not enable me to insert the whole of the Table given in the act: I shall therefore subjoin only a few of the values of annuities on Single lives according to *three* different prices of stock; to which I shall add the terms of the Royal Exchange Assurance Annuity Company and of the Provident Institution (the only ones that have hitherto published their rates), whereby an estimate may be formed of their comparative advantages. I would previously, however, observe that the annuities granted by Government and by the Provident Institution are pay-

I am unacquainted with the *terms* on which this part of their business is conducted: neither do I suppose that they are nicely weighed by that class of persons who are driven to such an unfortunate and ruinous measure.

Conclusion.

Before I conclude this subject I ought to mention that, in consequence of the pernicious practice of raising money by the sale of Life Annuities, which was much promoted by the secrecy with which such transactions were conducted, it was enacted by 17 Geo. III, c. 26 (commonly called the *Annuity Act*) that a memorial of all deeds, bonds, &c. for granting Life Annuities shall, within 20 days of the execution thereof, be enrolled in the Court of Chancery; which

able *half-yearly*: whereas those granted by the Royal Exchange are payable *quarterly*. But this does not make any *material* difference in the true value.

| Age. | Royal Exchange Rates. | Provident Institution Rates. | Government Rates. | | |
|------|-----------------------|------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| | | | 4 per cent. or Stock at 75. | 4½ per cent. or Stock 66½. | 5 per cent. or Stock at 60. |
| 35 | 15.380 | 15.600 | 14.563 | 13.878 | 13.043 |
| 40 | 14.700 | 14.800 | 13.761 | 13.072 | 12.371 |
| 45 | 13.700 | 13.700 | 12.821 | 12.232 | 11.650 |
| 50 | 12.820 | 12.600 | 11.719 | 11.299 | 10.714 |
| 55 | 12.050 | 11.495 | 10.638 | 10.256 | 9.836 |
| 60 | 10.870 | 10.250 | 9.494 | 9.009 | 8.889 |
| 65 | 9.800 | 9.000 | 8.242 | 8.081 | 7.792 |
| 70 | 8.770 | 7.750 | 6.849 | 6.734 | 6.522 |
| 75 | 7.750 | 6.500 | 5.395 | 5.333 | 5.195 |

memorial shall not only contain the date, names of *all the parties* (and for whom any of them are trustees), and of all the witnesses, but shall likewise set forth the amount of the annuity, the consideration (which shall be in money only *), and the name of the annuitant : otherwise such deed, &c. shall be null and void †.

This being the case, it would be almost impossible for any of those societies, of the nature of Joint-Stock Companies, to deal in this kind of securities ; since the names of *all the proprietors* (amounting to some hundreds, or perhaps to some thousands‡) must be inserted in the deed : and it would in fact be difficult, if not impossible, to collect all those names, at the time of making any one contract, owing to the fluctuating state of the proprietary. To obviate this inconvenience, some of those Societies have obtained Acts of Parliament with a view to enable them to enrol such memorials in the names of the parties to such deeds, &c ; and with an intention that such enrolment might (all other requisites of the Annuity Act being duly complied with) be as good and effectual, to all intents and pur-

* Bank notes, a cheque on a banker, a promissory note, or a bill of exchange are held to be a good consideration provided they are *paid when due*, and also provided that they are *fully set forth* in the deeds.

† There are some exceptions to this act ; amongst which are annuities granted *by* any Corporate Body, or under any authority or trust created by Act of Parliament.

‡ See the note in page 21.

poses, as if the names of *all* the parties interested were inserted therein.

The Societies, that have obtained these illusive * Acts, are the *Globe*, the *Albion*, the *London Life Association*, the *Pelican*, and the *Provident Institution* : and there is a clause in those acts whereby these Companies are enabled to *prosecute* and to *sue* in the name of one of their officers ; but they have not the privilege of *being sued* in the same manner. And it is moreover expressly provided by each Act “that nothing
“ therein contained shall extend, or be deemed, con-
“ strued, or taken to extend to *incorporate* the said
“ society or partnership ; or to relieve or discharge the
“ said society or partnership (or any of the members

* See the Acts 47 Geo. III, Sess. 1, c. xxx, xxxi, xxxii, xxxiii and xxxiv. Owing to a strange oversight, these Acts became of no effect, almost as soon as formed ; and, in order to render them of any real service to the parties, it was found necessary to have them amended. The *Globe*, the *Albion* and the *Pelican* therefore obtained new Acts for that purpose, in the very same year ; being 47 Geo. III, Sess. 2, c. lxxxvi, lxxxvii and lxxxviii : but the *London Life Association* and the *Provident Institution* remain in their original doubtful state. These new Acts, however, being still open to some objections, were further amended and *explained* (at least, the titles so express it) by 49 Geo. III, c. cxxiii, cxxiv and cxxv.

Under shelter of these statutes, the *Albion* boldly claims the ambiguous quality of being “ Empowered by Act of Parliament : ” but the *Provident Institution*, with less right and more effrontery, falsely asserts that it is “ specially empowered by Act of Parliament
“ for the Insurance of Lives, and the grant and purchase of Annui-
“ ties.” Surely this artifice is unworthy the respectable names at the head of those Societies.

“ thereof, or subscribers thereto respectively) from any
 “ responsibility, contracts, duties or obligations what-
 “ soever ; which, by law, they may (now, or at any
 “ time hereafter) be subject or liable to, either as be-
 “ tween such society or partnership and others ; or
 “ between the (or any of the) individual members of
 “ such society or partnership and others ; or among
 “ themselves ; or in any other manner whatsoever.”

I cannot close this chapter without observing that, by statute 14 Geo. III, c. 48, it is enacted that no Assurance shall be made on lives, wherein the party assured hath no interest ; that in all policies the name of such interested party shall be inserted ; and nothing more shall be recovered thereon than the amount of the interest of the assured. And it has lately been decided that, although an interest existed *up to the very time that the claim became due*, yet, if such interest be *afterwards* destroyed, the money could not be recovered. See (in East's Reports, vol. 9, page 72) the case of *Godsall and others* versus *Boldero and others*, three of the directors of the *Pelican Life Assurance Company*, who refused to pay the sum of £500, insured on the life of the late Mr. Pitt, under the plea that his debts had been paid by Parliament:

THE END.

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